

I CLAIM:

1. A urea grease composition comprising a lubricating base oil and from 2 to 30 wt.% of a thickening agent, with respect to the total weight of the urea grease composition and wherein said thickening agent is selected from the group consisting of:

- (1) a mixture of a compound (a) and a compound (b), containing compound (a) at 20 to 80 mol %, relative to the total amount of compound (a) and compound (b);
- (2) a mixture formed by mixing with a compound (c) with a mixture (1) or
- (3) a compound (c) alone,

wherein the compounds are represented by the general formulae

- (a)  $R_1NHCONHR_2NHCONHR_1$ ;
- (b)  $R_3NHCONHR_2NHCONHR_3$ ; and
- (c)  $R_1NHCONHR_2NHCONHR_3$ ,

and wherein  $R_2$  is a diphenylmethane group,  $R_1$  is a C6-10 saturated alkyl group and  $R_3$  is a C14-40 saturated and/or unsaturated alkyl group wherein unsaturated alkyl groups constitute at least 20 mol % of the  $R_3$  alkyl group.

2. The urea grease composition of claim 1 wherein unsaturated alkyl groups constitute at least 30 mol% of the  $R_3$  alkyl group.

3. The urea grease composition of claim 1 wherein an oleyl component constitutes at least 20 mol % of the  $R_3$  alkyl group.

4. The urea grease composition of claim 2 wherein an oleyl component constitutes at least 20 mol % of the  $R_3$  alkyl group.

5. The urea grease composition of claim 1 wherein said composition further comprises a zinc compound as an additive.

6. The urea grease composition of claim 2 wherein said composition further comprises a zinc compound as an additive.
7. The urea grease composition of claim 3 wherein said composition further comprises a zinc compound as an additive.
8. The urea grease composition of claim 5 wherein said zinc compound is selected from the group consisting of zinc dithiocarbamates and zinc dithiophosphates.
9. The urea grease composition of claim 8 wherein unsaturated alkyl groups constitute at least 30 mol% of the R<sub>3</sub> alkyl group.
10. The urea grease composition of claim 8 wherein an oleyl component constitutes at least 20 mol % of the R<sub>3</sub> alkyl group.
11. The urea grease composition of claim 1 wherein said composition further comprises a molybdenum compound as an additive.
12. The urea grease composition of claim 2 wherein said composition further comprises a molybdenum compound as an additive.
13. The urea grease composition of claim 3 wherein said composition further comprises a molybdenum compound as an additive.
14. The urea grease composition of claim 11 wherein said molybdenum compound is selected from molybdenum dithiocarbamates, molybdenum dithiophosphates and molybdenum complexes that are reaction products of a fatty oil, diethanolamine and a molybdenum source.
15. The urea grease composition of claim 14 wherein unsaturated alkyl groups constitute at least 30 mol% of the R<sub>3</sub> alkyl group.
16. The urea grease composition of claim 14 wherein an oleyl component constitutes at least 20 mol % of the R<sub>3</sub> alkyl group.

17. The urea grease composition of claim 1 wherein the thickening agent is present in an amount of from 5 to 20 wt.%, with respect to the total weight of the urea grease composition.

18. The urea grease composition of claim 17 wherein unsaturated alkyl groups constitute at least 30 mol% of the R<sub>3</sub> alkyl group.

19. The urea grease composition of claim 17 wherein said composition further comprises a zinc compound as an additive.

20. The urea grease composition of claim 17 wherein said composition further comprises a molybdenum compound as an additive.

21. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 1.

22. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 2.

23. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 3.

24. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 5.

25. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 8.

26. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 11.

27. A method of lubricating a bearing, comprising packing the bearing with the urea grease composition of claim 14.

28. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said

sliding surface with the urea grease composition of claim 1.

29. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said sliding surface with the urea grease composition of claim 2.

30. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said sliding surface with the urea grease composition of claim 3.

31. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said sliding surface with the urea grease composition of claim 5.

32. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said sliding surface with the urea grease composition of claim 8.

33. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said sliding surface with the urea grease composition of claim 11.

34. A method of lubricating a sliding surface of a machine in a relative motion, comprising lubricating said sliding surface with the urea grease composition of claim 14.

35. A urea grease composition comprising a lubricating base oil and from 2 to 30 wt.% of a thickening agent, with respect to the total weight of the urea grease composition and wherein said thickening agent is selected from the group consisting of:

- (1) a mixture comprising compound (a) and compound (b), containing compound (a) at 20 to 80 mol%, relative to the total amount of compound (a) and compound (b);
- (2) a mixture formed by mixing a compound (c) with a mixture (1); or

(3) a compound (c) alone,  
wherein the compounds are represented by the general  
formulae

(a)  $R_1\text{NHCONHR}_2\text{NHCONHR}_1$ ;

(b)  $R_3\text{NHCONHR}_2\text{NHCONHR}_3$ ; and

(c)  $R_1\text{NHCONHR}_2\text{NHCONHR}_3$ ,

and wherein  $R_2$  is a diphenylmethane group,  $R_1$  is a C8 saturated alkyl group,  $R_3$  is a C14-20 saturated and/or unsaturated alkyl group, with the alkyl groups being such that this constituent includes at least 20 mol% of an oleyl constituent.